Overview of Mercury Issues

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Mercury Program

What Is To Be Covered Today

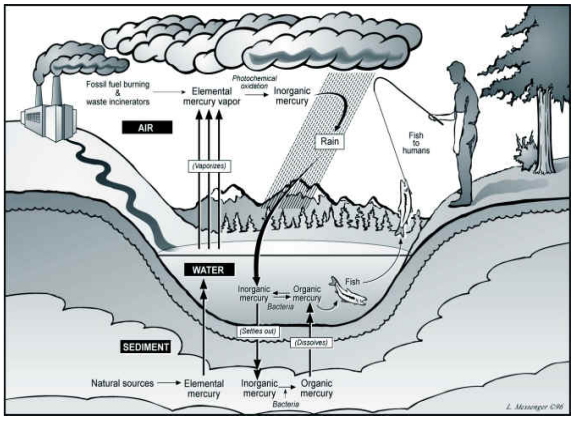
Mercury Issue

Solutions to Addressing Mercury
- **Regulatory**
- **Pollution Prevention**

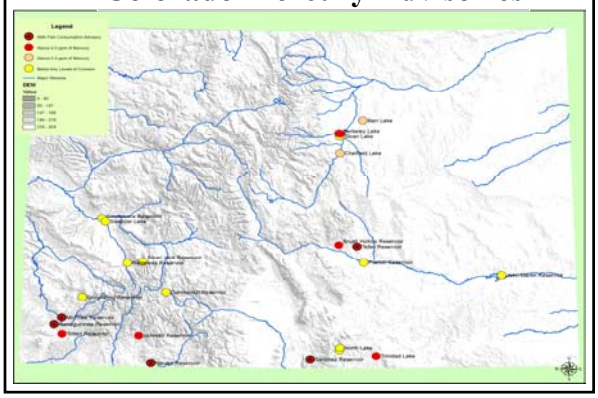
Mercury Toxicity

- Natural Element
- Accumulative Toxin
- Primary Exposure Pathway Through Fish Consumption
- Bioaccumulation of Hg Many Times Greater in Fish than in Surrounding Waters
- Fish Often Measured at Levels above What is Considered Protective of Health
- States have Many Non-Compliant Waterbodies
- Pregnant Women and esp. Fetuses Most at Risk
- 600K Children Affected Annually (in USA)*

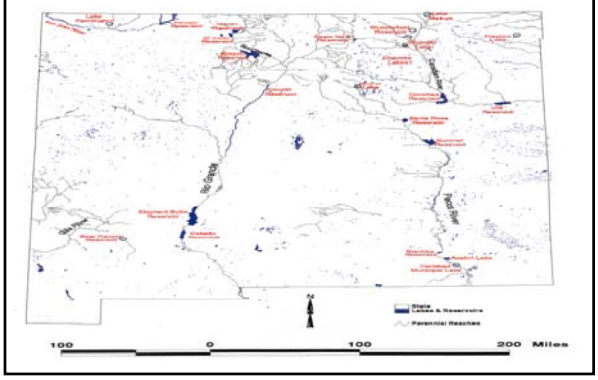
National Academy of Sciences

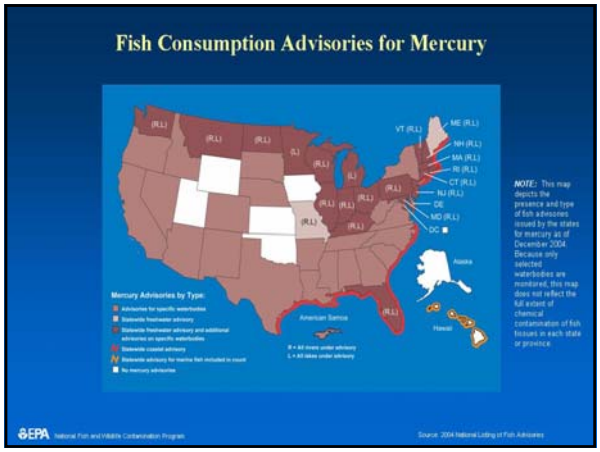


Colorado Mercury Advisories



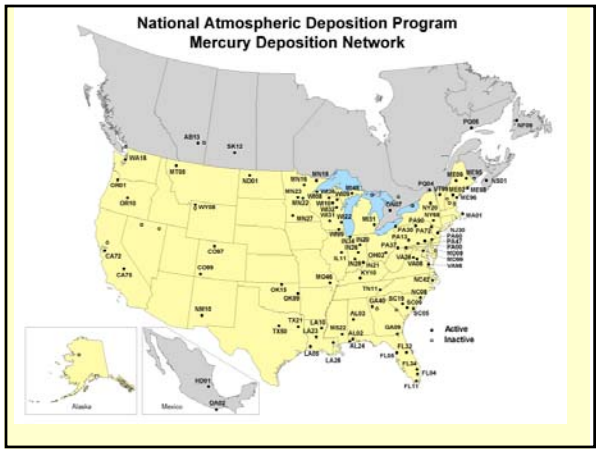
Waterbodies known to contain fish with Mercury concentrations at levels that could affect human health. Note: the only river known to be of concern is the San Juan.





Assessing Mercury Sources

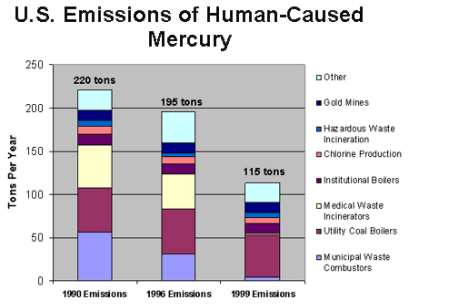
Mercury Monitoring (Air)
Mercury Inventories



General Mercury Deposition Observations

- Deposition Values at Mesa Verde Are Highly Variable
- Variability May Imply Importance of Local and Regional Mercury Sources
- "Hot Spots" for Mercury Are a Real Possibility (Local Waterbodies With High Mercury in Fish)
- Dry Deposition of Mercury Is An Issue – Needs Further Understanding

Mercury Inventory Efforts



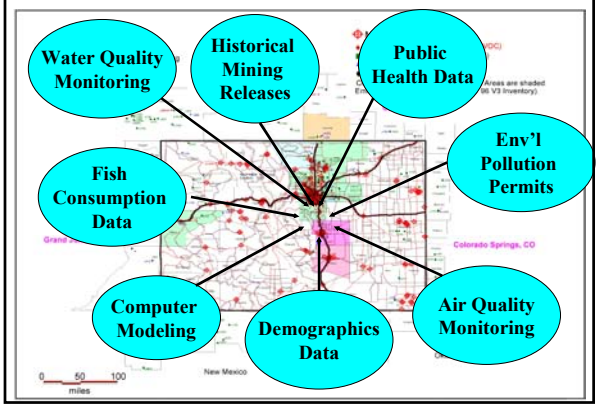
http://www.epa.gov/mercury/control_emissions/emissions.htm

Addressing Mercury

Regulatory

Non- Regulatory (Pollution Prevention)

Assessing Mercury Impacts



Mercury-Free Colorado Campaign Initiatives

- Problem Characterization
- Industry (Automotive Switch)
- Dental
- Consumer
- Public Education and Outreach
- Crematoria

2005 Champion

COLORADO Pollution Prevention PROGRAM

COLORADO Environmental Achievement

2005

New Mexico Mercury Reduction Action Plan (2006)

Vaccines, Dental amalgams, Air emissions from power plants, crematoria, municipal waste incinerators and Portland cement Plants, Auto switches, thermometers, fluorescent bulbs and thermostats (as this equipment is salvaged or landfilled), Consumer products, such as batteries, computer parts medication, cosmetics, fish and novelty items, Mining Federal Facility emissions and ongoing analysis of mercury Emissions and exposure pathways.

From the New Mexico Mercury Reduction Action Plan Task Force

Mercury Emissions from Power Plants

- Power Plants are Largest Man-Made Air Source in U.S.
- Mercury is Natural Component of Coal
- For Fate and Transport, Chemistry is Key
  - Hg^0 versus Hg^2
  - Chlorine Content
  - Not All Coal Created Equally
- Emissions Contribute to "Global Pool" But…
  Are Likely Local Contributors as Well
- Emissions From Plants Being Addressed by Clean Air Mercury Rule

Clean Air Mercury Rule

- EPA Rule to Control Mercury Emissions from Coal-Fired Electric Utilities
- New Source Performance Standard (CAA Sec. 111)
- National Cap Distributed by EPA to States
- States Distribute Mercury Allowances to Facilities
- Some States with "Excess" Allowances, Some with "Deficits"
- Allows for Mercury Emissions Trading ("Hot Spots")
- States to Develop Plan of Action for Allowances by November 2006

States' Plans of Action

NM CAMR rule will be heard by the NM Environmental Improvement Board on October 3, 2006 for adoption as a state rule. NM will not engage in inter or intrastate trading.

CO CAMR will be heard by the Colorado Air Quality Control Commission likely on November 16, 2006. CO is proposing, as allowed, some changes in our allocation scheme. CO will likely engage in interstate trading.

UT – Excess allowances, final CAMR plan unknown;

AZ - Not enough allowances to cover est'd emissions; CAMR plan unknown;

Controlling Mercury From Power Plants

- "Not All Coal Created Equal" Means "Not One Size Fits All" for Controls
- "Co-Control" of Pollutants Important (PM Control and Hg)
- Technological Advances Leading to Increased Hg Control (Pilot Projects)
- Coal Cleaning, Coal Blending, Fuel Switching

Lessons Learned with Mercury

- Protection of Public Health First Priority (FCAs)
- Data Continue to Come In (1999 ICR and Others), Drive Decisions and Next Steps
- Fate and Transport of Emissions Are Challenging
- Improved/ Expanded Monitoring (Air and Water) May Be Necessary
- Solutions Can be Multi-Faceted and Cross Media in Nature

Closing Comments

- Mercury Issue/Problem to be Here for Long Time e.g., CDC Report on Environmental Exposures
- For Power Plants, Full Benefit and Timeliness of EPA Rule Unknown
- Other Areas of Opportunity (Pollution Prevention)
- Voluntary Reductions With Some Success
- Metrics Imply Reductions in Environmental Impacts
- May Need to Do More in Reducing Mercury to Meet Public Health Mandates

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